



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,553	10/10/2003	Dynanesh Tamboli	22203-00002-US	7917
30678	7590	08/02/2005	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ LLP SUITE 800 1990 M STREET NW WASHINGTON, DC 20036-3425			MARCHESCHI, MICHAEL A	
			ART UNIT	PAPER NUMBER
			1755	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/683,553

Applicant(s)

TAMBOLI ET AL.

Examiner

Michael A. Marcheschi

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-29 is/are pending in the application.
- 4a) Of the above claim(s) 20-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18, 19 and 23-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner. *as amended*
- 10) ☒ The drawing(s) filed on 10 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner. *and amended on 5/22/05*
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1755

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The restriction requirement is made **final** since applicants have not argued it.

The amendment filed 5/23/05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The new matter added to the specification is the limitation “period 4d”, as defined in the amendments to the paragraph beginning on page 7, line 21, since this was never defined before. In addition, what is period 4d? Applicant is required to cancel the new matter in the reply to this Office Action.

The amendment filed 5/23/05 is also objected to because applicants define an amendment beginning at page 10, line 10 (amended table) but line 10 of page 10 is after the table, thus the line number is incorrect.

The amendment filed 5/23/05 is also objected to because applicants define an amendment beginning at page 11, line 1-page 13, line 4, but line 4 on page 13 does not coincide with the end of the amended subject matter (the amended section actually ends page 13, line 2), thus the line number is incorrect.

In response to this action, applicants are requested to provide a corrected version of the amendments.

The amendment filed 5/23/05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure (**drawing**). 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material to the drawing is not supported by the original disclosure is as follows:

The new matter added to the drawing is the identification of the lines because they were never defined before and applicants provide **no** evidence that the line identifications were present as part of the original disclosure.

If applicants cancel the drawing to overcome the above, they are requested to cancel any reference in the specification.

Claims 1-3, 5-16, 18-19 and 23-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The new matter added to claims 1, 23, 24 and 29 is the limitation "at least one" to define the members because this was never defined before. The specification, although provide

Art Unit: 1755

examples, never defines that “at least one” or “mixtures” of the claimed members can be used.

The other claims are rejected because they depend on a rejected claim.

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 is indefinite as to the limitation “in composition with” because the examiner is unclear as to what this encompasses, thus rendering the scope of the claim unclear. Do applicants mean “in combination with”?

Claim 26 is also indefinite as to the limitation “pKa of less than 2.5” because this pKa values is outside the scope of claim 1 because claim 1 defines a pKa value of “about 2.5 or lower”.

Claims 1-16, 18, 19 and 23-29 are rejected under 35 U.S.C. 103(a) as obvious over Grumbine et al. for the same reasons defined in the previous office action with respect to claims 1-19. With respect to new claim 23, the reference defines that an imidazole (benzimidazole) can be used. With respect to claim 24, this is obvious for the same reasons defined for claim 18 set forth in the previous office action. With respect to claim 25, the reference teaches an amount for the phosphoric acid which reads on the claimed amount. With respect to claim 26, acids can be used in combination. With respect to claim 27, the reference teaches that the corrosion inhibitor (imidazole) in combination with the quaternary ammonium hydroxide is present in an amount of up to about 2%. Since a combination can be used, the amounts for the individual components

Art Unit: 1755

are broadly implied which can encompass the claimed range, as long as the final amount is used. With respect to claim 28, the amount of surfactant is well within the scope of the skilled artisan in order to maximize the dispersion. With respect to claim 29, column 6, line 2 of the reference defines this.

Claims 1-16, 18, 19 and 23-29 are rejected under 35 U.S.C. 103(a) as obvious over Darsillo et al. for the same reasons defined in the previous office action with respect to claims 1-19. With respect to new claims 23-24, the reference defines that a triazole (benzotriazole) can be added. With respect to claim 25, the reference teaches an amount for the phosphoric acid (chelating agent) which reads on the claimed amount. With respect to claim 26, the reference discloses numerous acids that can be used, as the chelating agent, and it is prima facie obvious to combine two or more materials (chelating acid) disclosed by the prior art to form a third material (mixture of acids) that is to be used for the same purpose. In re Kerkhoven 205 USPQ 1069. In addition, it is prima facie obvious to combine two or more materials (pH buffers) disclosed by the prior art to form a third material (mixture of pH buffers (i.e. mixture of weak acid and strong base or visa versa)) that is to be used for the same purpose. In re Kerkhoven 205 USPQ 1069. With respect to claim 27, the reference teaches an amount in section [0072]. With respect to claim 28, the amount of surfactant is well within the scope of the skilled artisan in order to maximize the dispersion. With respect to claim 29, the reference defines this.

Claims 1-16, 18, 19 and 23-29 are rejected under 35 U.S.C. 103(a) as obvious over Ma et al.

Art Unit: 1755

Although this is a new rejection., the amendment to claim 1 (abrasive particle types, etc. in combination with a corrosion inhibitor) presented a new claim scope which was not addressed by the examiner. In view of this new claim scope, the rejection can be made final.

Ma et al. teach in sections [0022], [0053], and [0068]-[0077], a composition (second slurry) having the claimed pH comprising an inorganic abrasive (silica, etc. in the claimed amount), and oxidizer (claimed amount), tetramethyl ammonia (apparent that is in the form of an ammonium hydroxide-see claim 27), an activating agent (phosphoric acid), water. Benzotriazole can also be added (claimed amount).

The reference teaches a composition which comprises all of the claimed components and although the reference fails literally define the use of an ammonium hydroxide, it is the examiners position that from claim 27, it is apparent that the tetramethyl ammonia component is in the form of an ammonium hydroxide. In addition and with respect to the other ammonium hydroxides, the reference states that organic bases can be used and this broadly encompasses the claimed ammonium hydroxides because they are organic bases absent evidence. Although the reference fails literally define the amount of ammonium hydroxide, the reference states that this is added in an amount to modify the pH within the range defined. It is the examiners position that the amount needed to accomplish this fails within the range of the instant claims, thus making the range obvious absent evidence to the contrary. Although most of the instant claims do not define the amount of phosphoric acid (for comparative purposes), the reference teaches an amount which inherently would alter the pH within the claimed range. In addition, since the pH is the same, this component added in the reference amount reads on the claimed limitation.

With respect to claim 25, although the reference fails literally define the amount of phosphoric

Art Unit: 1755

acid for the second slurry, according to the definition of an activating agent (section [0053]), it is the examiners position that the amount needed to accomplish this fails within the range of the instant claims, thus making the range obvious absent. In addition, since an activating agent is also added to the first slurry and the activating agent is what solubilizes or etches the copper, it can be reasonably presumed that the second slurry will also contain the activating agent in a similar amounts absence evidence to the contrary. With respect to the use of a surfactant (claim 19), this component is obvious in the second slurry in order to minimize agglomeration, as clearly disclose in section [0062], which would optimize the polishing composition. With respect to claim 28, the amount of surfactant is well within the scope of the skilled artisan in order to maximize the dispersion. With respect to claim 26, the reference discloses numerous acids that can be used, as the activating agent and/or as the passivating agent and, it is prima facie obvious to combine two or more materials (activating acid) disclosed by the prior art to form a third material (mixture of acids) that is to be used for the same purpose. In re Kerkhoven 205 USPQ 1069. In addition, it is prima facie obvious to combine two or more materials (passivating agents) disclosed by the prior art to form a third material (mixture of passivating agents (i.e. mixture of benzotriazole and an acid)) that is to be used for the same purpose. In re Kerkhoven 205 USPQ 1069.

Applicant's arguments filed 5/23/05 have been fully considered but they are not persuasive.

With respect to the rejection based on Grumbine et al., applicants argue that this reference does not teach a quaternary ammonium hydroxide **for stabilizing an acidic slurry.**

Art Unit: 1755

Although this may be the case (not literally defined for this purpose), the reference still uses this component in the composition, irrespective of its function. Since the composition contains this, no distinction is seen to exist. Applicants state that table 1 of the reference only discloses this component. The examiner is unclear as to this argument because column 5, line 54-column 6, line 3 clearly defines this component. Applicants also appear to argue that the reference does not suggest a corrosion inhibitor for copper. Although a corrosion inhibitor **for copper** might not be literally defined (for the purpose of preventing corrosion of copper), the reference clearly teaches that the composition can contain nitrogen containing heterocycles and as previously define, the broad interpretation of “nitrogen containing heterocycles” encompasses benzotriazole because “a generic disclosure renders a claimed species prima facie obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971). Benzotriazole is a nitrogen containing heterocycles. Applicants have **not** shown any clear evidence as to why the recitation of nitrogen containing heterocycles do meet the claimed component. In addition, the reference clearly states that an imidazole can be used, which is one of the claimed corrosion inhibitors (see claim 23). Applicants appear to also argue that one skilled in the art would not consider the hydroxides or the amino alkyls as suitable corrosion inhibitors of copper. Although this may be the case, the examiner has not made the argument that these are corrosion inhibitors, but rather that the claimed corrosion inhibitor is encompassed by the teachings of “nitrogen containing heterocycles”. It is apparent that the composition of the reference can contain all of the claimed components and applicants have not shown any clear evidence to the contrary. Applicants point to page 11, example 4 as showing that the hydroxide

Art Unit: 1755

is useful in improving colloidal stability of the slurry. The examiner acknowledges this example but this example is not a proper submission of expected results because the example is not commensurate in scope with the claims.

With respect to the previous rejection based on Ma et al., applicants argue that this reference does not teach a quaternary ammonium hydroxide **for stabilizing an acidic slurry**. Although this may be the case (not literally defined for this purpose), the reference still uses this component in the composition, irrespective of its function. Since the composition contains this, no distinction is seen to exist. Applicants also state that this reference is concerned with an organic abrasive. The examiner acknowledges that the first slurry is an organic abrasive slurry but the second slurry is an inorganic slurry, as defined above.

With respect to Darsillo et al., applicants argue that this reference does not teach a quaternary ammonium hydroxide **for stabilizing an acidic slurry**. Although this may be the case (not literally defined for this purpose), the reference still uses this component in the composition, irrespective of its function. Since the composition contains this, no distinction is seen to exist. Applicant also argue that nothing in the reference would suggest choosing the hydroxide in combination with the claimed acid from all the acids to achieve the results of the instant application. A suggestion to choose the hydroxide in combination with the acid is the fact that the reference teaches that they can be used and applicants have **not** show any clear evidence of criticality for the claimed combination. With respect to the acid having a pKa value of less than 2.5, applicants appear to argue the acids disclosed in section [0057] (pH adjusting acids), however, the examiner has relied upon the teaching in section [0051] for the recitation of an acid having a pKa value of less than 2.5 (phosphoric acid). Assuming further arguendo, the

Art Unit: 1755

suggestion of selecting the claimed acids is the fact that it is known to be used and again applicants have not shown any clear evidence of critically for the claimed acid pKa value. Applicants agree the combination of the hydroxide and acid, but again applicants have not established critically by way of clear evidence of unexpected results. Finally, applicants argue that it would be counterintuitive to select both an acid and base for pH adjustment. As defined above, the acid used to reject the previous claims did not stem from the acids disclosed to adjust the pH. Although in response to applicants amendment, the examiner might rely upon the pH adjusting acids to reject new claim 26, applicants attention is directed to the fact that one can use a mixture of weak acid and strong base or visa versa to adjust the pH and applicants have not shown any evidence as to why an acid/base combination for pH adjustment is improper.

At the end of the response, applicants provide numerous case law citations. However, it is the examiners position that he has established the proper reasoning as to what the instant claims are met and therefore no further comment is deemed necessary.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

Art Unit: 1755

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968)≡. In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

A generic disclosure renders a claimed species prima facie obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971).

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of

Art Unit: 1755

obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ

548. Evidence of unexpected results must be commensurate in scope with the subject

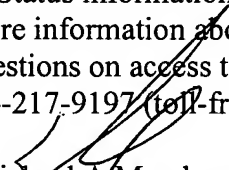
matter claimed. *In re Linder* 173 USPQ 356.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

7/05
MM


Michael A. Marcheschi
Primary Examiner
Art Unit 1755